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09/884,090	06/20/2001	Yasuo Matsumura	109890	2361

7590

09/13/2002

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EXAMINER

NOTE, JANIS L

ART UNIT

PAPER NUMBER

1756

9

DATE MAILED: 09/13/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/884,090

Applicant(s)

MATSUMURA et al

Examiner

J. DOTE

Group Art Unit

1756

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☒ Responsive to communication(s) filed on 6/20/01
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- Of the above claim(s) 15-20 is/are withdrawn from consideration.
- ☐ Claim(s) is/are allowed.
- ☒ Claim(s) 1-14 is/are rejected.
- ☐ Claim(s) is/are objected to.
- ☒ Claim(s) 1-20 are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☒ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☒ All ☐ Some\* ☐ None of the:
  - ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 5
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-14, drawn to toners and developers, classified in class 430, subclass 110.3.
- II. Claims 15 and 16, drawn to methods of making toners, classified in class 430, subclass 137.14.
- III. Claims 17-20, drawn to processes for forming an image, classified in class 430, subclass 126.

2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process, such as the process exemplified in example 1 of the instant specification at pages 17-18. Said process comprises the steps of: (1) preparing a monomer mixture comprising ethylenically unsaturated monomers to form a binder resin, a colorant, and a releasing agent; (2) dispersing the monomer mixture in an aqueous solution to form droplets of

monomer mixture; (3) polymerizing the droplets dispersed in the aqueous solution to form polymer particles; (4) heating the polymerized mixture of step (3) at a temperature about 5°C higher than the melting point of the releasing agent for one hour; and (5) filtering and washing the particles to obtain toner particle. The resultant toner particles comprise protrusions and an amount of the releasing agent on the surface of the toner particles that are both within the limitations recited in instant claim 1. Such a process does not require the step of aggregating resin particles with releasing agent particles dispersed in a liquid as recited in the method claims of Group II.

Inventions I and III are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process, such as a process comprising the steps of developing an electrostatic latent image on a support with the toner product and fixing the toned image to the support. Said process does not require transferring the toned image to a transfer material as recited in the method claims of Group III.

Inventions II and III are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different modes of operation, different functions, or different effects (MPEP § 806.04, MPEP § 808.01). In the instant case the different inventions have different modes of operation, different functions, and different effects. The method of Group II comprises steps of making toner particles. The method of Group III comprises steps of forming a toned image on a transfer material.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, and as shown by their different classification, restriction for examination purposes as indicated is proper.

3. During a telephone conversation with Mr. David Lafkas (Reg. No. 50,424) on Aug. 30, 2002, a provisional election was made with traverse to prosecute the invention of invention of Group I, claims 1-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-20 have been withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

5. The examiner acknowledges the amendment filed in Paper No. 3 on Aug. 17, 2001, renumbering pages 33-39 to pages 32-38. However, contrary to the Notice of Omitted Items mailed Aug. 14, 2001, page 32 of the specification was not omitted from the specification as originally filed. The examiner has renumbered the renumbered pages 32-37 back to pages 33-38, as originally filed, and regrets the inconvenience to applicants.

6. Applicants' explanations of the relevance of Japanese Patent Nos. 63-282752 and 6-250437 listed on the form PTO-1449 filed in Paper No. 5 on Jun. 20, 2001, are found in the instant specification at page 3, line 4.

In the future, applicants should clearly indicate where their statements of relevance are located in the instant specification by page and line numbers to avoid non-consideration

of references listed in applicants' Information Disclosure Statement for failure to comply with 37 CFR 1.98(a)(3).

7. The disclosure is objected to because of the following informalities:

The use of trademarks, e.g. Neogen SC [sic: NEOGEN SC] at page 20, line 4, has been noted in this application. The trademarks should be capitalized wherever they appear and be accompanied by the generic terminology. This example is not exhaustive. Applicants should review the entire specification for compliance.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Appropriate correction is required.

8. The examiner notes that the surface property index recited in instant claim 13 is defined in the instant specification at page 5, line 23, to page 6, line 3. The index GSDv recited in instant claim 14 is defined in the instant specification at page 6, lines 16-18.

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 14 are indefinite in the phrase "ratio of an element derived from the releasing agent to the elements on the surface of the toner determined by X-ray photoelectron spectroscopy" (emphasis added) because it is not clear what is meant by the phrase "element derived." It is not clear whether the element refers to some group of the releasing agent. Furthermore, it is not clear to what "the elements on the surface" refer, e.g., binder resin, etc.

Claims 5 and 6 are indefinite because it contains the trademark/trade name COULTER COUNTER. See TESS search report, serial no. 72062272. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is



uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. As a matter of law, a trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is identified/described as a machine used to determine the calculated specific surface area recited in the instant claim. Accordingly, the identification/description is indefinite.

Claim 11 is indefinite in the phrase "selected from the group of polyethylene wax, paraffin wax, Fischer-Tropsch wax and nitrogen containing wax" for improper Markush language. Proper Markush language would be "R is selected from the group consisting of . . . and . . . ." or "R is . . . or . . . ." MPEP 2173.05(h). The language "from a group" is not closed, as is "the group consisting of." Thus, it appears that applicants intend the recited Markush group to contain other additional components. However, Markush groups must be completely specified. Only "the group consisting of" is permissible.

Claim 13 is indefinite because the surface property index is determined by the trademark COULTER COUNTER. See the instant specification, the paragraph bridging pages 5 and 6. The same trademark can be used to identify different apparatuses or

products depending on the desire of the owner. The apparatus associated with the trademark at the time the invention was made may not be the same as the apparatus at a later date, and may not be the same apparatus as in the past. The trademark does not refer to a definite apparatus. Thus, the claim is indefinite.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered

therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f), or (g) prior art under 35 U.S.C. 103(a).

14. Claims 1-6 and 8-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 6,002,662 (Matsumura'662) combined with the admissions in the instant specification at page 7, lines 10-17, page 11, lines 10-12, and in embodiment 3 at page 26, line 19, to page 28, line 5.

Matsumura'662 discloses a developer comprising a carrier and a toner comprising toner particles comprising a binder resin, a colorant, and the releasing agent paraffin wax having a melting point of 85°C. See example 1 at cols. 19-21. The paraffin wax is within the compositional limitation recited instant claim 11. Matsumura'662's toner has a volume average particle size of 6.0  $\mu\text{m}$  and a volume GSD of 1.23, which are within the ranges recited instant claims 8, 10, and 14.

Matsumura'662 toner is obtained by: (1) mixing resin particle dispersions (1) and (2), a pigment dispersion, and a

releasing agent dispersion comprising the paraffin wax; (2) heating the mixture at 48°C for 30 minutes to obtain flocculated or aggregated particles having an average particle diameter of 5.4  $\mu\text{m}$ ; (3) gradually adding 60 grams of the resin particle dispersion (1) to the flocculated particles of step (2); (4) heating the mixture of step (3) at 50°C for one hour; (5) heating the mixture of step (4) at 95°C for 5 hours; and (6) cooling, filtering, and washing the mixture of step (5) to obtain toner particles.

Matsumura'662 does not disclose that his toner has the protrusions and the amount of releasing agent on the surface of the toner as recited in the instant claims. Nor does Matsumura'662 disclose that his toner particles have the surface property index as recited in instant claims 5, 6, and 13, or the shape factor SF1 recited in instant claim 9.

However, Matsumura'662 toner in example 1 appears to have been prepared within the process limitations described in the instant specification at page 7, lines 10-17, which make a toner having the protrusions and the amount of releasing agent on the surface of the toner as recited in the instant claims. Matsumura'662's process appears also to be substantially the same as or similar to the process exemplified in embodiment 3 of the instant specification. Matsumura'662's aggregation step (2) and heating step (5) are within the limitations of disclosed at

page 7 of the instant specification. The instant specification at page 11, lines 10-12, discloses that "migration of the releasing agent [into the protrusions] can be effected by maintaining a temperature in the range of  $\pm 20^{\circ}\text{C}$  from the melting point of the releasing agent for a period of from 2 to 10 hours." As described above, Matsumura'662's heating step (5) is performed at  $95^{\circ}\text{C}$  for 5 hours. The temperature  $95^{\circ}\text{C}$  is  $10^{\circ}\text{C}$  higher than the melting point of Matsumura'662's paraffin wax of  $85^{\circ}\text{C}$ .

Embodiment 3 of the instant specification comprises the steps of: (1) heating the mixture of resin particle dispersion, a colorant dispersion, and a releasing agent dispersion at  $45^{\circ}\text{C}$  for 30 minutes to form aggregated particles; (2) adding a resin particle dispersion to the aggregated particles and heating the mixture at a temperature of  $48^{\circ}\text{C}$  for one hour; (3) heating the mixture of step (2) at a temperature  $98^{\circ}\text{C}$  for 6 hours.

Embodiment 3 uses the same releasing agent as Matsumura'662.

Embodiment 3's steps (1), (2), and (3) are similar to the steps in Matsumura'662's process in example 1. The toner in embodiment 3 has a volume average particle size of  $5.0\text{ }\mu\text{m}$ , a volume GSD of 1.20, an SF1 of 116, and a surface property index of 1.16. The SF1 and surface property index are both within the ranges recited in instant claims 9 and 6, respectively. The toner also has protrusions having a height of  $1.5\text{ }\mu\text{m}$  and comprising the paraffin wax. The amount of wax present on the

surface is 8.0% by atom. Both the protrusions and the amount of wax are within the ranges recited in instant claims. The range of "approximately from 0.1 to 1  $\mu\text{m}$ " recited in instant claim 2 reads on the height of 1.5  $\mu\text{m}$ . There is no evidence of record showing that heights of 1.5  $\mu\text{m}$  lead to distinctly different properties from heights of "approximately 1.0  $\mu\text{m}$ ." The toner of embodiment 3 has a fixability at 125°C and offset occurred at 240°C or higher. The toner had no problem in releasing, and provided uniform images.

As discussed above, Matsumura'662's toner meets the physical limitations recited in instant claims 8, 10, and 14. In addition, Matsumura'662's discloses that the "exposure of a wax substance on the surface of the toner particle was very slight and no free wax substance was found." Col. 21, lines 27-30. Said toner was shown to have satisfactory fixability at 125°C, and no offset was observed up to 210°C. Col. 21, lines 31-36. In addition, the toner continuously provided stable images for 50,000 copies. Col. 21, lines 52-55. Thus, it appears that Matsumura'662's toner provides the same properties sought by applicants.

Accordingly, it is reasonable to presume that Matsumura'662's toner in example 1 has protrusions, the amount of wax, the SF1, and the surface property index as recited in the

instant claims. The burden is on applicants to prove otherwise.

In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

15. Claims 1-14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over US 5,910,389 (Matsumura'389) combined with the admissions in the instant specification at page 7, lines 10-17, page 11, lines 10-12, and in embodiment 3 at page 26, line 19, to page 28, line 8.

Matsumura'389 discloses a developer comprising a carrier and a toner comprising toner particles comprising a binder resin, a colorant, and the releasing agent paraffin wax having a melting point of 85°C. See col. 19, lines 1-9, and example 3 at cols. 24-26. The paraffin wax is within the compositional limitation recited instant claim 11. The toner further comprises externally added hydrophobic silica TS720 in an amount of 1.0 part by weight to 100 parts by weight of the toner, which is within the range of 1 to 3 parts by weight recited in instant claim 7. Hydrophobic silica TS720 is identified by the instant specification as having an average primary particle size of 12 nm, which is within the particle size range of 0.2  $\mu\text{m}$  or less recited in instant claim 7. See the instant specification, embodiment 3, page 28, lines 7-8. Matsumura'389's toner has a volume average particle size of 5.7  $\mu\text{m}$ , a volume GSD of 1.20, and

a SF1 of 112, which are all within the ranges recited instant claims 8-10, respectively, and claim 14.

Matsumura'389's toner in example 3 is obtained by:

(1) mixing resin particle dispersions (5) and (6), pigment dispersion (2), and releasing agent dispersion (1) comprising the paraffin wax; (2) heating the mixture at 45°C for 30 minutes to obtain flocculated or aggregated particles having an average particle diameter of 5.0  $\mu\text{m}$ ; (3) gradually adding 50 grams of resin particle dispersion (4) to the flocculated particles of step (2); (4) heating the mixture of step (3) at 47°C for one hour; (5) heating the mixture of step (4) at 100°C for 2 hours; and (6) cooling, filtering, and washing the mixture of step (5) to obtain toner particles.

Matsumura'389 does not disclose that his toner has the protrusions and the amount of releasing agent on the surface of the toner as recited in the instant claims. Nor does Matsumura'389 disclose that his toner particles have the surface property index as recited in instant claims 5, 6, and 13.

However, Matsumura'389 toner in example 3 appears to have been prepared within the process limitations described in the instant specification at pages 7 and 11, which make a toner having the protrusions and the amount of releasing agent on the surface of the toner as recited in the instant claims. Matsumura'389's process appears also to be substantially the same



as or similar to the process exemplified in embodiment 3 of the instant specification. The description of the disclosures at pages 7 and 11, and in embodiment 3 of the instant specification set forth in paragraph 14 above are incorporated herein by reference. Matsumura'389's aggregation step (2) and heating step (5) are within the limitations of disclosed at pages 7 and 11 of the instant specification. As described above, Matsumura'389's heating step (5) is performed at 100°C for 2 hours. The temperature 100°C is 15°C higher than the melting point of Matsumura'389's paraffin wax of 85°C. Embodiment 3 uses the same releasing agent as Matsumura'389. Embodiment 3's steps (1), (2), and (3) are similar to the steps in Matsumura'389's process in example 1.

As discussed above, Matsumura'389's toner meets the physical limitations recited in instant claims 8-10 and 14. In addition, Matsumura'389's discloses that the "exposure of a waxy substance to the surface of the toner particle . . . was very slight and the amount of isolated waxy substance was very small." Col. 26, lines 15-19. Said toner was shown to have satisfactory fixability at 125°C, and no offset was observed up to 190°C. Col. 26, lines 41-44. In addition, the toner continuously provided stable images for 10,000 copies with no "filming phenomena." The "efficiency of toner transfer from the photoreceptor to the image receiving paper during the continuous

copying was as high as 95 to 98%." Col. 26, lines 44-51. Thus, it appears that Matsumura'389's toner provides the same properties sought by applicants.

Accordingly, it is reasonable to presume that Matsumura'389's toner in example 3 has protrusions, the amount of wax, and the surface property index as recited in the instant claims. The burden is on applicants to prove otherwise.

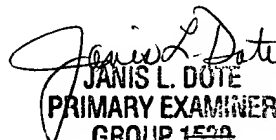
Fitzgerald, supra.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (703) 308-3625. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (703) 308-2464. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9311 (Rightfax) for after final faxes, and (703) 872-9310 for other official faxes.

Any inquiry of papers not received regarding this communication or earlier communications, or of a general nature or relating to the status of this application or proceeding should be directed should be directed to the Customer Service Center of Technology Center 1700 whose telephone number is (703) 306-5665.

JLD  
September 11, 2002

  
JANIS L. DOTE  
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